

1 What is claimed is:

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3 1. A dishwasher comprising:

4 a housing;

5 a tub in the housing to hold tableware;

6 an injector assembly for injecting water on the tableware in the tub; and

7 a water softener softening the water supplied to the injector assembly, the water

8 softener comprising:

9 a first container holding an ion-exchange resin for removing heavy
10 metal and metal ions from the water;

11 a second container holding a predetermined amount of salt and salt
12 water to supply the salt water to the first container to recycle the ion-
13 exchange resin that is saturated;

14 a float installed in the second container; and

15 a sensor provided to the second container to sense a concentration of
16 the salt water according to a distance from the float.

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18 2. The dishwasher as claimed in claim 1, wherein the float fluctuates in height
19 according to the concentration of the salt water.

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21 3. The dishwasher as claimed in claim 1, wherein a guide for guiding floatage
22 of the float is further provided to the second container.

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24 4. The dishwasher as claimed in claim 1, wherein the float comprises a body

25 and a magnet attached to the body.

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27 5. The dishwasher as claimed in claim 1, wherein the sensor senses an amount
28 of the salt in the second container according to the distance from the float.

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30 6. The dishwasher as claimed in claim 1, wherein the sensor senses a shortage
31 of the salt in the second container according to the distance from the float.

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33 7. The dishwasher as claimed in claim 1, wherein the sensor generates a current
34 if the distance from the float is smaller than a predetermined distance.

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36 8. The dishwasher as claimed in claim 1, wherein the sensor generates a current
37 to vary according to the distance from the float.

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39 9. The dishwasher as claimed in claim 1, further comprising an information
40 device informing the concentration of the salt water according to a signal generated from the
41 sensor.

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43 10. The dishwasher as claimed in claim 1, further comprising an information
44 device informing a salt amount in the second container.

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46 11. The dishwasher as claimed in claim 10, wherein the information device
47 informs a shortage of the salt amount.

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49 12. A water softener of a dishwasher, the water softener softening water supplied
50 to an injector assembly of the dishwasher, the water softener comprising:

51 a first container holding an ion-exchange resin for removing heavy metal and metal
52 ions from the water;

53 a second container holding a predetermined amount of salt and salt water to supply
54 the salt water to the first container to recycle the ion-exchange resin that is saturated;

55 a float installed in the second container; and

56 a sensor provided to the second container to sense a concentration of the salt water
57 according to a distance from the float.

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59 13. The water softener as claimed in claim 12, wherein the float fluctuates in
60 height according to the concentration of the salt water.

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62 14. The water softener as claimed in claim 12, wherein a guide for guiding
63 floatage of the float is further provided to the second container.

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65 15. The water softener as claimed in claim 12, wherein the float comprises a
66 body and a magnet attached to the body.

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68 16. The water softener as claimed in claim 12, wherein the sensor senses an
69 amount of the salt in the second container according to the distance from the float.

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71 17. The water softener as claimed in claim 12, wherein the sensor senses a
72 shortage of the salt in the second container according to the distance from the float.

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74 18. The water softener as claimed in claim 12, wherein the sensor generates a
75 current if the distance from the float is smaller than a predetermined distance.

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77 19. The water softener as claimed in claim 12, wherein the sensor generates a
78 current to vary according to the distance from the float.

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80 20. The water softener as claimed in claim 12, further comprising an information
81 device informing the concentration of the salt water according to a signal generated from the
82 sensor.

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84 21. The water softener as claimed in claim 12, further comprising an information
85 device informing a salt amount in the second container.

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87 22. The dishwasher as claimed in claim 21, wherein the information device
88 informs a shortage of the salt amount.